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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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P 8053

EXAMINER

CEBULAK, M

12M2/0624

ART UNIT PAPER NUMBER

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PATENT DEPT
549 TECHNOLOGY SQUARE
CAMBRIDGE MA 02139-3589

4

1209

DATE MAILED:

06/24/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

This application has been examined Responsive to communication filed on 6/6/95 This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. Notice of References Cited by Examiner, PTO-892.
2. Notice of Draftsman's Patent Drawing Review, PTO-948.
3. Notice of Art Cited by Applicant, PTO-1449. 7 sheets
4. Notice of Informal Patent Application, PTO-152.
5. Information on How to Effect Drawing Changes, PTO-1474.
6.

Part II SUMMARY OF ACTION

1. Claims 14-44 are pending in the application.
Of the above, claims 14 & 25-44 are withdrawn from consideration.
2. Claims _____ have been cancelled.
3. Claims _____ are allowed.
4. Claims 15-24 are rejected.
5. Claims 22 are objected to.
6. Claims _____ are subject to restriction or election requirement.
7. This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. Formal drawings are required in response to this Office action.
9. The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are acceptable; not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been approved by the examiner; disapproved by the examiner (see explanation).
11. The proposed drawing correction, filed _____, has been approved; disapproved (see explanation).
12. Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has been received not been received been filed in parent application, serial no. _____; filed on _____.
13. Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. Other

EXAMINER'S ACTION

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Status of Claims

1. Claims 14-44 are pending in this application. Claims 1-13 have been cancelled. Claims 14 and 25-44 are hereby withdrawn from further consideration by the Examiner as being drawn to a non-elected invention.

Election/Restriction

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claims 25-27, drawn to a process of making an intermediate compound of formula II by hydrolysis, classified in e.g. Class 549, subclass 428.

Group II. Claims 14 and 28-30, drawn to a process of making an intermediate compound of formula II by reaction with $Q^1CH_2R^1$, classified in e.g. Class 549, subclass 427.

Group III. Claims 15-24, drawn to compounds per se, i.e. the final products, classified in e.g. Class 549, subclass 13.

Group IV. Claims 31-33, drawn to a process of making an intermediate of formula III, classified in e.g. Class 549, subclass 428.

Group V. Claim 34, drawn to a process of making an intermediate of formula IV, classified in e.g. Class 549, subclass 356.

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Group VI. Claims 35-38, drawn to compounds per se, i.e. intermediates of formula III, classified in e.g. Class 549, subclass 428.

Group VII. Claims 39-42, drawn to compounds per se, i.e. intermediates of formula VI, classified in e.g. Class 549, subclass 428.

Group VIII. Claims 43 and 44, drawn to a process of making an intermediate of formula VII, classified in e.g. Class 549, subclass 426.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions I, II, IV, V, VIII and III, VI, VII are related as processes of making and products made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (M.P.E.P. § 806.05(f)). In the instant case, the products, as claimed, can be can be prepared by a modified reaction sequence as disclosed in Gravesteijn et al. (US 4,508,811) or Katagiri et al. (US 5,079,127).

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of

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their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Atty. David Cole on 6/13/96 a provisional election was made with traverse to prosecute the invention of group III, claims 15-24. Affirmation of this election must be made by applicant in responding to this Office action. Claims 14 and 25-44 are withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

Claim Objections

7. Claim 22 is objected to because of the following informalities: the claim contains a duplicate word, namely, line 3 of the claim states, "bearing at its 7-position an **an** -N[(CH₂)₃]₂...". Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. Claims 16-23 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 states "A squarylium compound according to claim 15 which is essentially free from squarylium compounds...", it is unclear what encompasses "essentially free", if it encompasses a certain purity level or if it encompasses a particular percent conversion of starting materials to final products. Claims which depend from an indefinite claim are also indefinite. Ex parte Cordova, 10 USPQ2d 1949, 1952 (P.T.O. Bd. App. 1988).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same

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person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

10. Claims 15-19 and 24 are rejected under 35 U.S.C. § 103 as being unpatentable over Gravesteijn et al. (US 4,508,811).

Gravesteijn et al. disclose alkylpyrylium-squarylium and alkylthiopyrylium-squarylium compounds. Specifically the compounds of formula A of Gravesteijn et al. correspond to Applicants' compounds wherein Q¹ and Q² of Applicants' claim 15 are alkyl substituted pyrylium compounds. Applicants require that the Q¹CR¹ and Q²CR² moieties are different, as Gravesteijn et al. disclose that the compounds of formula A have the variable X which is defined as oxygen or sulfur, one can envision that one X of Gravesteijn et al. is oxygen and the other X of Gravesteijn et al. is sulfur. Further, while both of X can be the same, the R groups of Gravesteijn et al. could represent in one instance butyl and in another instance pentyl. It appears that this specification provides for Applicants invention wherein Q¹CR¹ and Q²CR² are different from one another, specifically, wherein the X variables are different ^{or} ~~of~~ wherein each occurrence of R is

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different. One can envision that the compounds of formula A of Gravesteijn et al. would encompass compound (a) of claim 24 wherein R is t-butyl at each occurrence and that one of X is S and the other is O. Therefore, to prepare the instant compounds and expect that they would be useful as dyes would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made since Gravesteijn et al. disclose (col. 2, lines 16-29) the compounds of formula A which are old and known to be useful as dyes.

11. Claims 15-21 and 23-24 are rejected under 35 U.S.C. § 103 as being unpatentable over Katagiri et al. (US 5,079,127). Katagiri et al. disclose (col. 5, lines 7-53) compounds of formula (9), which generically embrace those as claimed herein. In particular, A_3^e (of formula (9)) is the moiety as represented at column 5, line 20, and the moieties encompassing Z_{91} and Z_{92} are as defined, at column 5, lines 36-46. Specifically, Z_{91} and Z_{92} encompass pyrylium, thiopyrylium, selenapyrylium, benzopyrylium, benzothiopyrylium, benzoselenapyrylium, naphthopyrylium, naphthothiopyrylium, naphthoselenapyrylium which bear R_{91} - R_{94} . Column 5, lines 47-51 define wherein "each represent hydrogen, alkyl, alkoxy, or a substituted or unsubstituted aryl, styryl, 4-phenyl-1,3-butadienyl, or heterocyclic residue, ...". Applicants claims 20 and 21 require that one of Q^1 or Q^2 contains a phenyl in the 2-position (claim 20) and that the phenyl ring

contains an *ortho* alkoxy or cycloalkoxy substituent (claim 21). Since Katagiri et al. define that each R_{91} - R_{94} can be a substituted aryl, one can envision an alkoxy substituted phenyl ring on the pyrylium moiety, especially since Katagiri et al. define (col. 74, lines 42-49) substituted aryl to include tolyl, xylyl, biphenyl, ethylphenyl, methoxyphenyl, ethoxyphenyl, amyloxyphenyl, dimethoxyphenyl and others. Therefore, to prepare the instant compounds and expect that they would be useful as dyes in optical recording medium would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made since Katagiri et al. teach the substituted pyrylium-squarylium compounds to be old and useful as a dye in an organic thin film used in optical recording medium, particularly the compounds of formula (9), wherein A_3^{\oplus} is the squarylium moiety as defined at column 5, line 20 and R_{91} - R_{94} represent an atomic group which completes a pyrylium, thiapyrylium, selenapyrylium, benzopyrylium, benzothiopyrylium, benzoselenapyrylium, naphthopyrylium, naphthothiopyrylium, naphthoselenapyrylium, which can bear the substituents, e.g., an alkoxy substituted phenyl as defined at column 74, lines 37-59.

Absent a clear explanation of how the instant invention differs from that taught in the prior art and how these

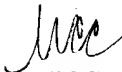
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differences render the instant invention non-obvious, all claims must be refused.

Papers related to this application may be submitted to Group 1200 by facsimile transmission. Papers should be faxed to Group 1200 via (703)308-4556. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner M. Cebulak at (703)308-4520. The Examiner can be reached between 7:30 a.m. and 5:00 p.m. Monday-Thursday.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1200 receptionist at (703)308-1235.


mcc
June 18, 1996


JOSE' G. DEES
SUPERVISORY PATENT EXAMINER
GROUP 1200